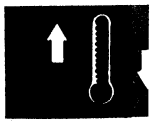
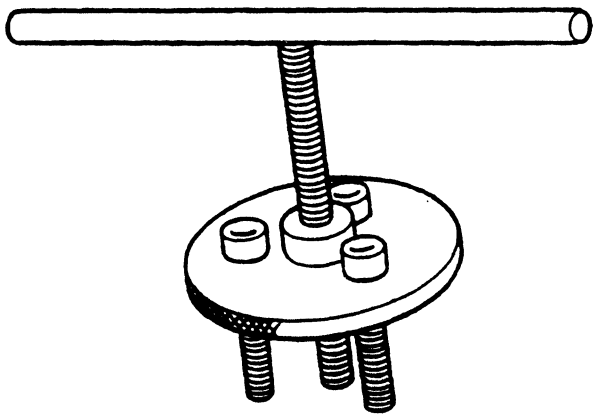
Air Conditioner

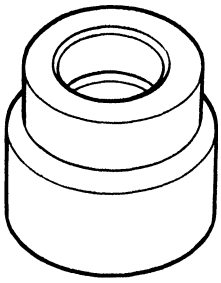


Special Tools

Ref. No.	Tool Number	Description	Qty	Page Reference
①	07935—8050003	Flywheel Puller	1	22-28
②	07945—4150200	Seal Driver	1	22-28
③	07JAC—SH20300	Shaft Ring Remover	1	22-29



①



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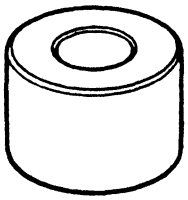
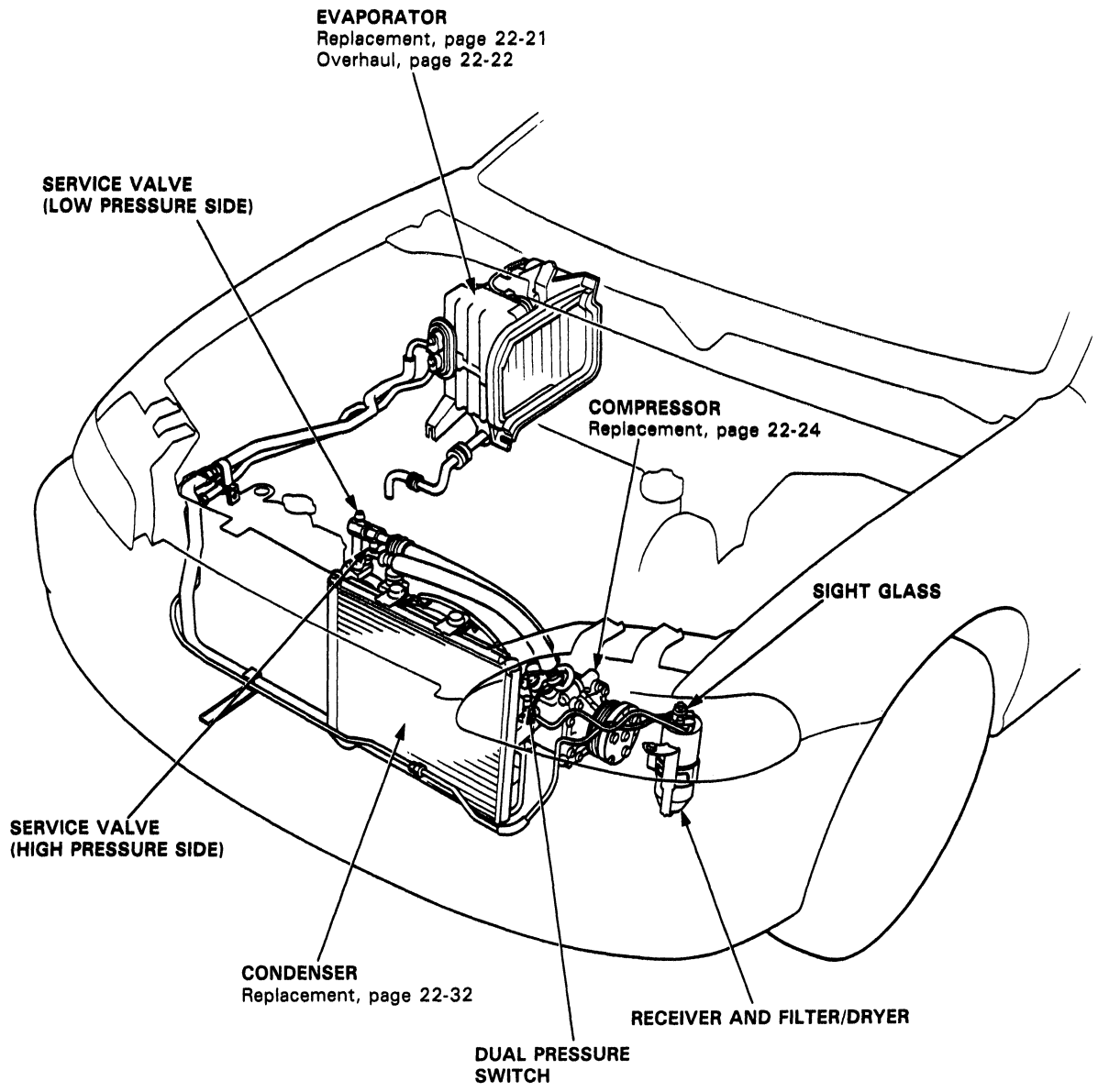
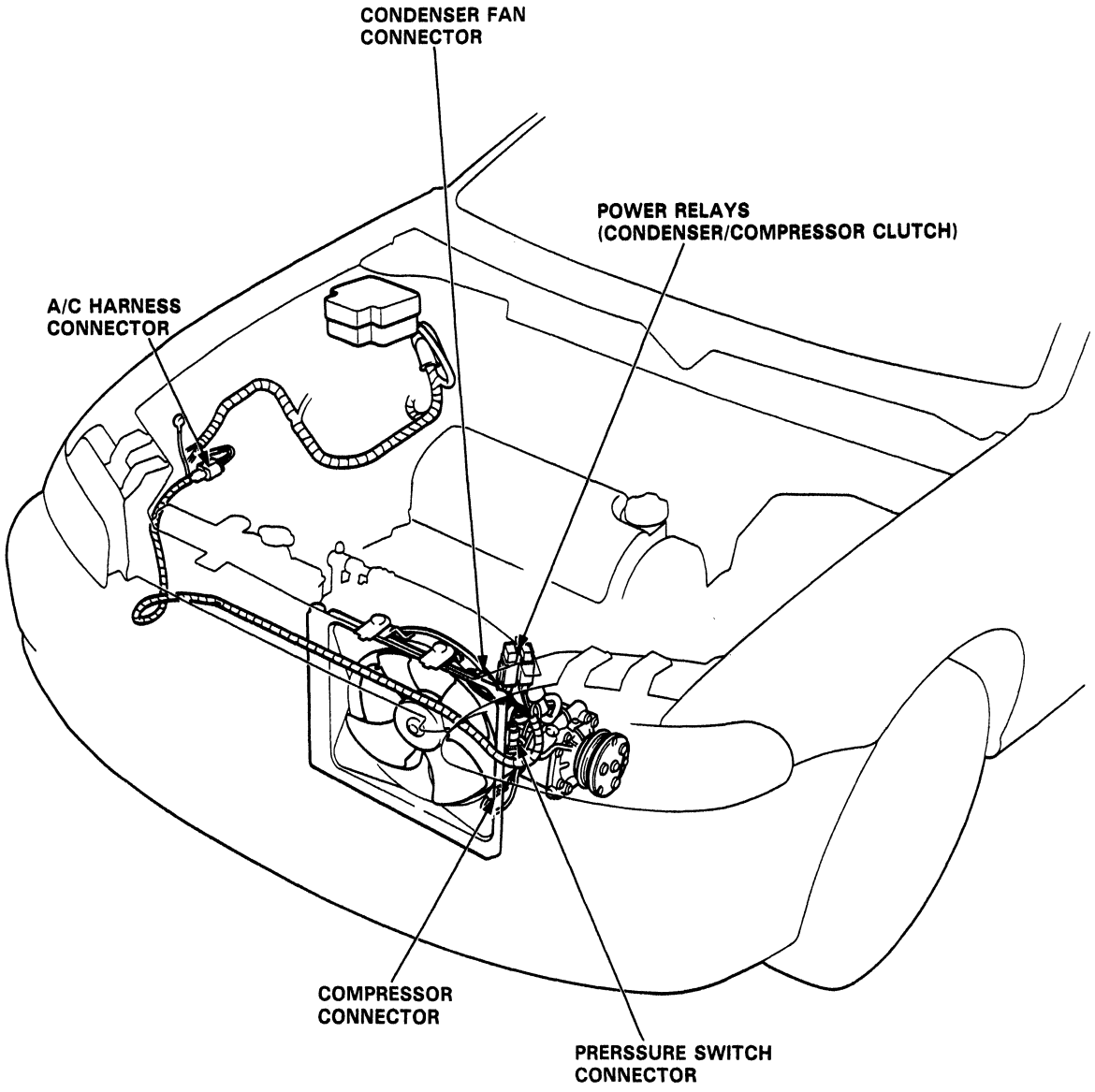


③

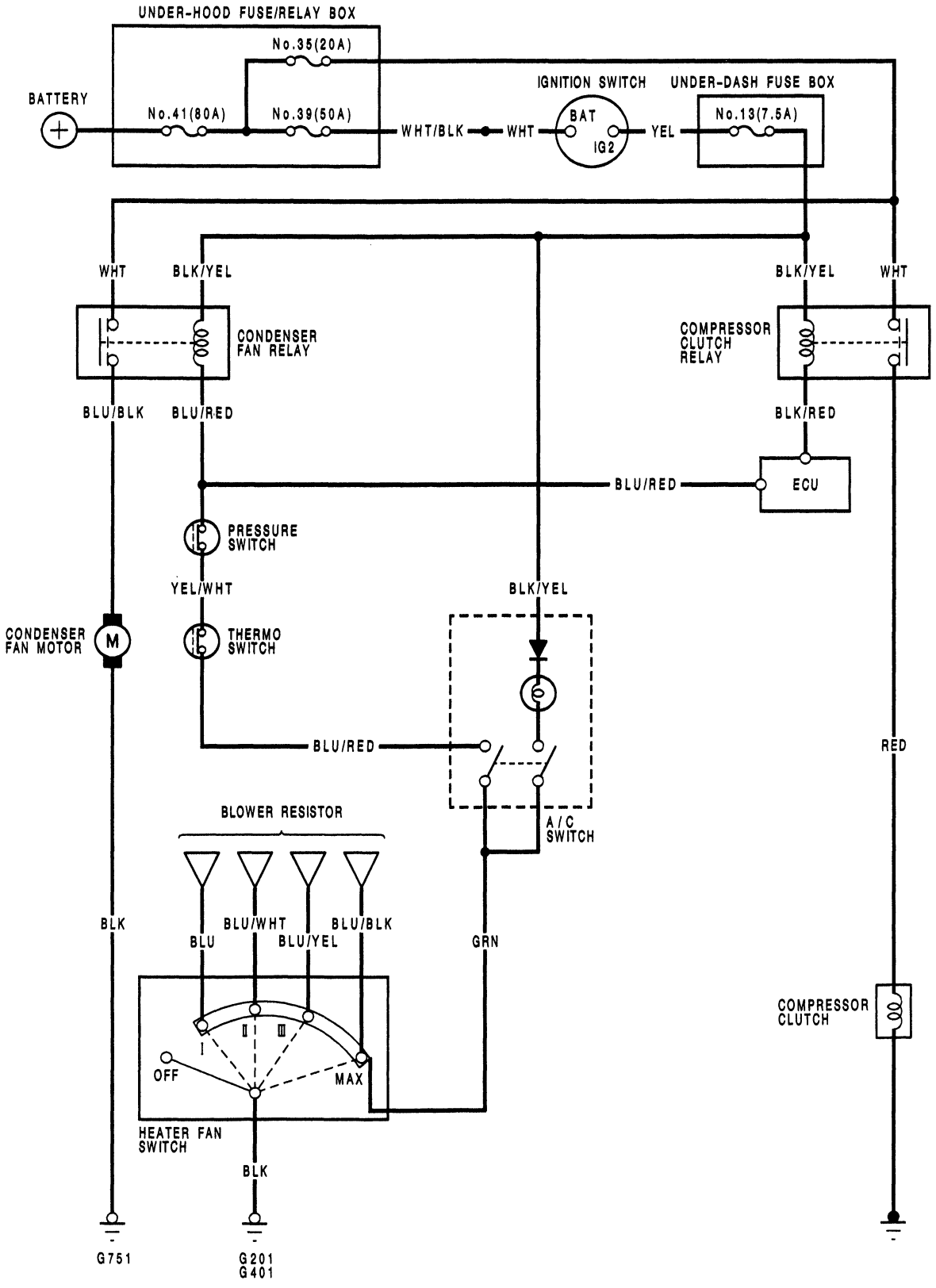
Illustrated Index



Wiring/Connector Locations



Circuit Diagram



Troubleshooting

Reference Chart

- Any abnormality must be corrected before continuing the test.
- Because of the precise measurements needed, use a voltmeter and ammeter when testing.

Before performing any troubleshooting procedures check:
- Fuses No. 41 (80 A), No. 39 (50 A), No. 13 (7.5 A), No. 35 (20 A)
- Grounds No. G751, G201, G401
- All connectors are clean and tight.

SYMPTOM	REMEDY
Condenser fan does not run at all.	Perform the procedures in the flowchart. (page 22-7)
Compressor clutch does not engage.	Perform the procedures in the flowchart. (page 22-9)
A/C system does not come on.	Perform the procedures in the flowchart. (page 22-12)

Condenser Fan

Condenser fan motor does not run at all.

Check for blown No. 35 (20 A) and No. 13 (7.5 A) fuses.

Are the fuses OK?

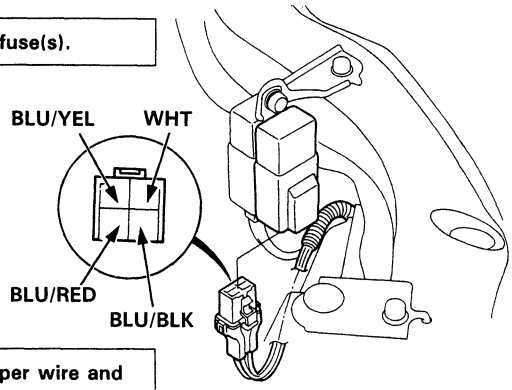
NO → **Replace the blown fuse(s).**

YES

Disconnect the condenser fan relay 4P connector.

Connect the WHT and BLU/BLK wires with a jumper wire.

View from terminal side



Does the fan run?

NO → **Disconnect the jumper wire and go to page 22-8.**

YES

Turn the ignition switch ON.

Disconnect the jumper wire and check for battery voltage at the BLK/YEL wire.

Is there battery voltage?

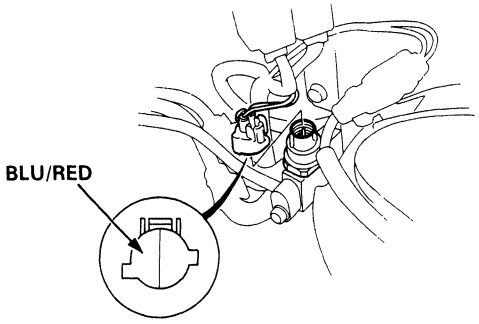
NO → **Repair open in the BLK/YEL wire between the condenser fan relay and the under-dash fuse box.**

YES

Turn the ignition switch OFF.

Disconnect the A/C pressure switch 2P connector.

View from terminal side



Check for continuity at the BLU/RED wire between the condenser fan relay and the A/C pressure switch.

Is there continuity?

NO → **Repair open in the BLU/RED wire.**

YES

Replace the condenser fan relay.

(cont'd)

Condenser Fan (cont'd)

From page 22-7

Measure voltage between the WHT wire terminal (+) and body ground (−) at the condenser fan relay 4P connector.

Is there battery voltage?

NO → **Repair open in the WHT wire between the under-hood fuse/relay box and condenser fan relay.**

YES

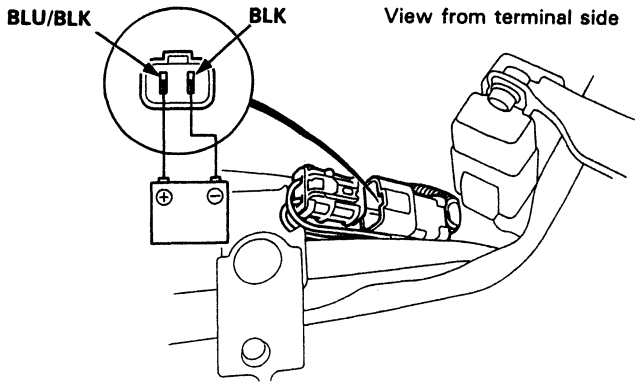
Disconnect the 2P connector at the condenser fan.

Check for continuity in the BLU/BLK wire between the condenser fan relay and fan.

Is there continuity?

NO → **Repair open in the BLU/BLK wire between the condenser fan relay and condenser fan.**

YES



Test the condenser fan motor. Connect a 12 V battery positive (+) lead to the BLU/BLK wire terminal, and the negative (−) lead to the BLK wire terminal.

Does the condenser fan motor run?

NO → **Replace the condenser fan motor.**

YES

Repair open in the BLK wire between the condenser fan motor and body ground. If the wire is OK, check for poor ground at G751.

Compressor

Compressor clutch does not engage.

Check for blown fuses No. 13 (7.5 A) and No. 35 (20 A).

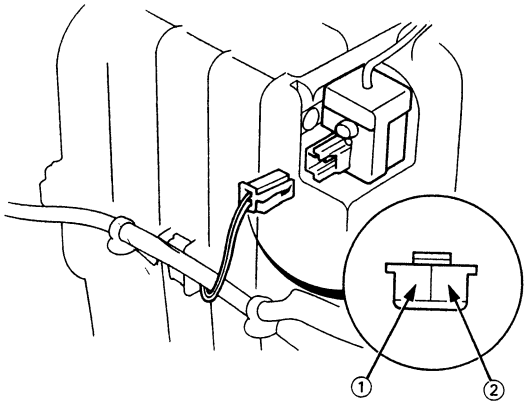
Are the fuses OK?

NO → **Replace the fuse(s).**

YES

Disconnect the A/C thermostat 2P connector.

Connect the ① and ② terminals using a jumper wire.



Start the engine.

Does the compressor engage?

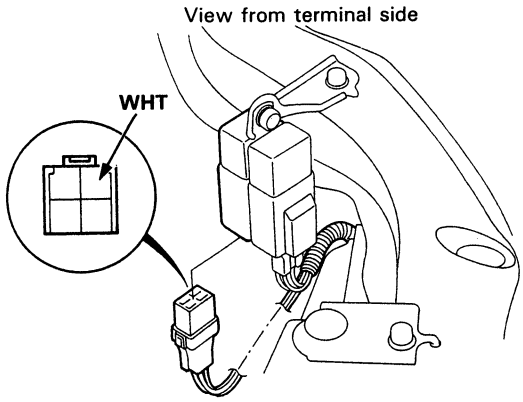
YES → **Replace the A/C thermostat.**

NO

Turn the ignition switch OFF.

Reconnect the A/C thermostat 2P connector.

Disconnect the compressor clutch relay 4P connector.



Measure voltage between the WHT wire terminal (+) and body ground (−).

Is there battery voltage?

NO → **Repair open in the WHT wire between the under-hood fuse/relay box and the compressor clutch relay.**

YES

Turn the ignition switch ON.

To page 22-10

(cont'd)

Compressor (cont'd)

From page 22-9

Measure voltage between the BLK/YEL wire terminal (+) and body ground (−).

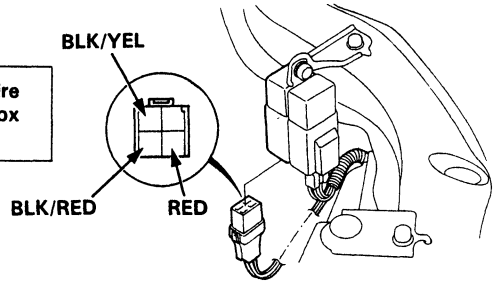
Is there battery voltage?

NO → **Repair open in the BLK/YEL wire between the under-dash fuse box and compressor relay.**

YES

Turn the ignition switch OFF.

Test the compressor clutch relay as described on page 22-35.



View from terminal side

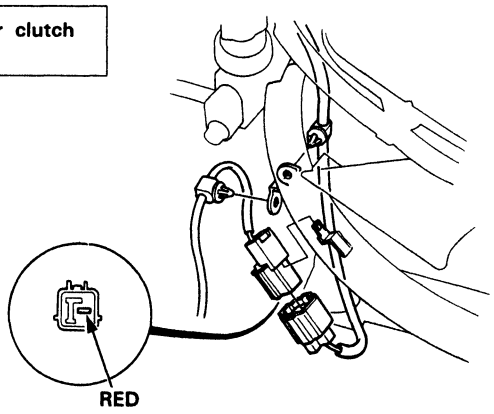
Is the compressor clutch relay OK?

NO → **Replace the compressor clutch relay.**

YES

Disconnect the compressor clutch 1P connector.

Check for continuity in the RED wire between the compressor clutch relay and compressor clutch.



View from terminal side

Is there continuity?

NO → **Repair open in the RED wire between the compressor clutch relay and compressor clutch.**

YES

Check the clearance between the clutch pulley and pressure plate (page 22-27).

Is the clearance OK?

NO → **Adjust the clearance (page 22-27).**

YES

Test the compressor clutch field coil (page 22-27).

To page 22-11

From page 22-10

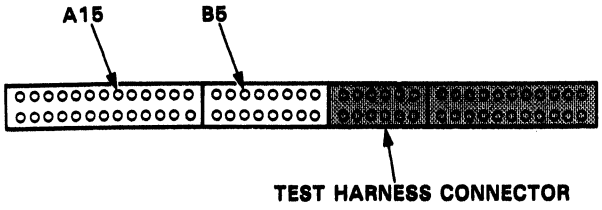
Is the compressor clutch field coil OK?

NO → **Replace the compressor clutch field coil (page 22-28).**

YES

Reconnect the A/C compressor clutch relay.

Connect the ECU test harness "A" and "B" connectors to the wire harness only, not the ECU (section 11).



Turn the ignition switch ON.

Measure voltage between the A15 terminal (+) and body ground (−).

Is there battery voltage?

NO → **Repair open in the BLK/RED wire between the compressor clutch relay and ECU.**

YES

Turn the ignition switch OFF.

Measure voltage between the B5 test harness terminal (+) and body ground (−).

Is there battery voltage?

NO → **Repair open in the BLU/RED wire between the condenser fan relay and ECU.**

YES

Substitute a known-good ECU and recheck. If symptom/indication goes away, replace original ECU.

A/C System

A/C system does not come ON.

Check for blown No. 13 (7.5 A) and No. 35 (20 A) fuses.

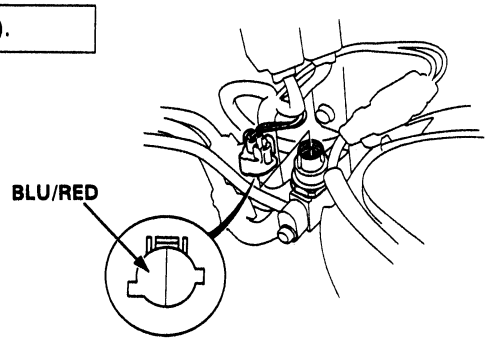
Are the fuses OK?

NO → **Replace the blown fuse(s).**

YES

Disconnect the pressure switch 2P connector.

Measure voltage between the BLU/RED wire terminal (+) and body ground (−).



Turn the ignition switch ON.

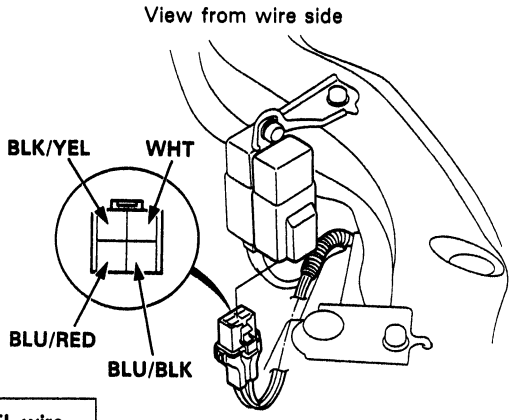
Is there battery voltage?

YES → To page 22-14

NO

Disconnect the condenser fan relay 4P connector.

Measure voltage between the BLK/YEL terminal (+) and body ground (−).



Is there battery voltage?

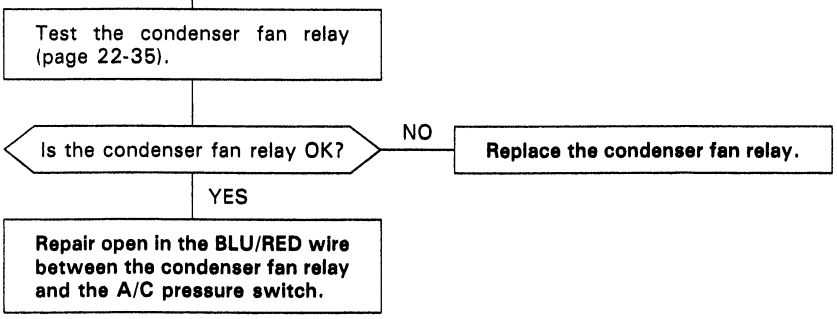
NO → **Repair open in the BLK/YEL wire between the under-dash fuse box and condenser fan relay.**

YES

Turn the ignition switch OFF.

To page 22-13

From page 22-12



(cont'd)

A/C System (cont'd)

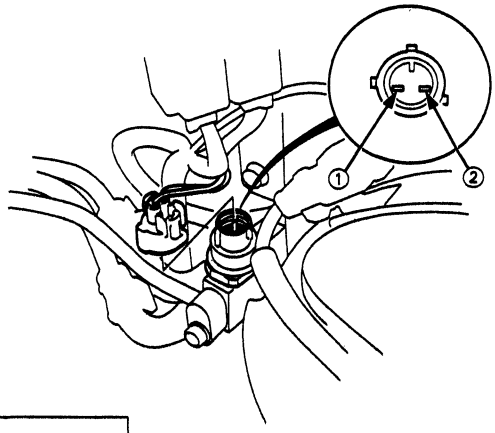
From page 22-12

Turn the ignition switch OFF.

Check for continuity between No. 1 and No. 2 terminals of the A/C pressure switch.

Is there continuity?

NO → Check for refrigerant pressure.



Is refrigerant pressure OK?

NO → **Perform leak test (page 22-34).**

YES → **Replace the pressure switch.**

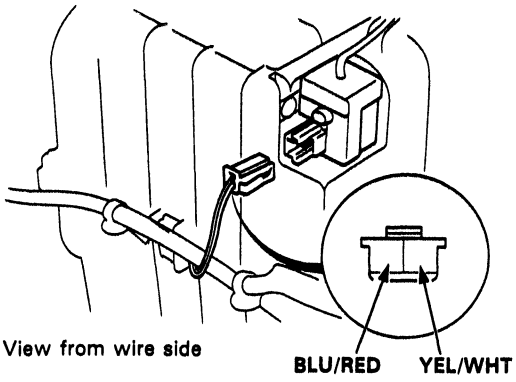
YES

Reconnect the pressure switch 2P connector.

Disconnect the thermo switch 2P connector.

Turn the ignition switch ON.

Measure voltage between the YEL/WHT wire terminal (+) and body ground (−).



Is there battery voltage?

NO → **Repair open in the YEL/WHT wire between the pressure switch and thermo switch.**

YES

Turn the ignition switch OFF.

Test the thermo switch (page 22-35).

To page 21-15

From page 22-14

Is the thermo switch OK?
NO → **Replace the thermo switch.**
YES

Remove the heater control panel (page 21-20) and disconnect the 14P connector.

Check for continuity in the BLU/RED wire between the thermo switch and heater control panel.

Is there continuity?
NO → **Repair open in the BLU/RED wire between the thermo switch and heater control panel.**
YES

Disconnect the heater fan switch 6P connector.

Check for continuity in the GRN wire between the heater control panel 14P connector and heater fan switch 6P connector.

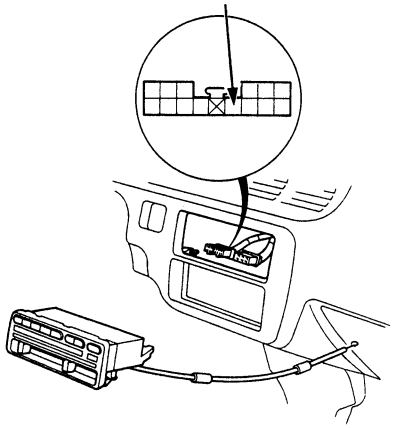
Is there continuity?
NO → **Repair open in the GRN wire between the heater control panel and heater fan switch.**
YES

Check for continuity at the BLK wire between the heater fan switch 6P connector and body ground.

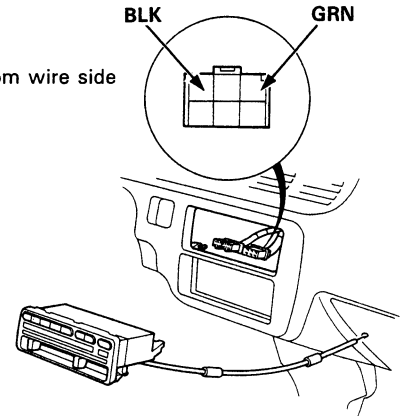
Is there continuity?
NO → **Repair open in the BLK wire between the heater fan switch and body ground.**
If the wire is OK, check for proper ground at G201 and 401.
YES

Replace the heater control panel.

View from wire side



View from wire side

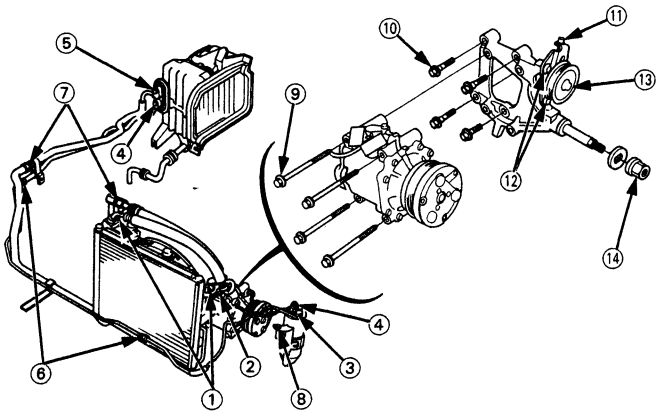


A/C Service Tips and Precautions

⚠WARNING When handling refrigerant (R-12):

- **Always wear eye protection.**
- **Do not let refrigerant get on your skin or your eyes; if it does:**
  - **— Do not rub your eyes or skin.**
  - **— Splash large quantities of cool water in your eyes or on your skin.**
  - **— Rush to a physician or hospital for immediate treatment. Do not attempt to treat it yourself.**
- **Keep refrigerant containers (cans of R-12) stored below 40°C (100°F).**
- **Do not handle or discharge refrigerant in an enclosed area near an open flame; it may ignite and produce poisonous gas.**
- **Chlorine from chemicals called chlorofluorocarbons (CFCs) destroy the ozone in the stratosphere. Automotive air conditioning systems currently use chlorofluorocarbons as the refrigerant. Auto air conditioning service equipment has been developed to minimize the release of CFCs to the atmosphere. All service procedures should be performed using this equipment and the manufacturer's instructions.**

1. Always disconnect the negative cable from the battery whenever replacing air conditioner parts.
2. Keep moisture and dust out of the system. When disconnecting any lines, plug or cap the fittings immediately; don't remove the caps or plugs until just before the lines are reconnected.
3. Before connecting any hose or line, apply a few drops of refrigerant oil to the seat of the O-ring or flare nut.
4. When tightening or loosening a fitting, use a second wrench to support the matching fitting.
5. When discharging the system, use a refrigerant recovery system; don't release refrigerant into the atmosphere.
6. Add refrigerant oil after replacing the following parts;
   Condenser ..... 20 cc (2/3 fl oz)
   Evaporator ..... 45 cc (1-1/2 fl oz)
   Line or hose ..... 10 cc (1/3 fl oz)
   Receiver ..... 10 cc (1/3 fl oz)
   Compressor ..... On compressor replacement, subtract the volume of oil drained from the removed compressor from 120 cc (4 fl oz), and drain the calculated volume of oil from the new compressor.
   120 cc (4 fl oz) − Volume of removed compressor = Draining volume.



① Discharge hose bolts (8 x 1.25)	22 N·m (2.2 kg-m, 16 lb-ft)
② Suction hose bolt (8 x 1.25)	22 N·m (2.2 kg-m, 16 lb-ft)
③ Condenser pipe bolts (6 x 1.0)	10 N·m (1.0 kg-m, 7 lb-ft)
④ Receiver pipe bolts (6 x 1.0)	10 N·m (1.0 kg-m, 7 lb-ft)
⑤ Suction pipe bolt (8 x 1.25)	22 N·m (2.2 kg-m, 16 lb-ft)
⑥ Receiver pipe joint nuts	14 N·m (1.4 kg-m, 10 lb-ft)
⑦ Suction pipe joint nuts	33 N·m (3.3 kg-m, 24 lb-ft)
⑧ Receiver/dryer bolts (6 x 1.0)	10 N·m (1.0 kg-m, 7 lb-ft)
⑨ Compressor mounting bolts	25 N·m (2.5 kg-m, 18 lb-ft)
⑩ Compressor bracket mounting bolts	48 N·m (4.8 kg-m, 35 lb-ft)
⑪ Adjusting bolt	8 N·m (0.8 kg-m, 5.8 lb-ft)
⑫ Idler pulley bracket bolts	25 N·m (2.5 kg-m, 18 lb-ft)
⑬ Idler pulley center nut	48 N·m (4.8 kg-m, 35 lb-ft)
⑭ Engine mount bracket nut	70 N·m (7.0 kg-m, 50 lb-ft)

A/C System Service

A/C System Discharge

⚠ WARNING

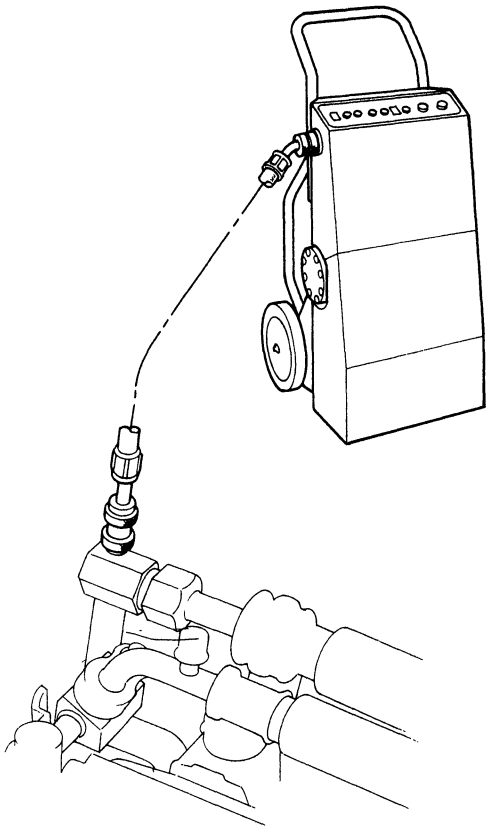
- **Keep away from open flames. The refrigerant, although nonflammable, will produce a poisonous gas if burned.**
- **Work in a well-ventilated area. Refrigerant evaporates quickly, and can force all the air out of a small enclosed area.**

1. Connect a Refrigerant Recovery System to the A/C system.

2. Operate the Refrigerant Recovery System according to the manufacturer's instructions.

   IMPORTANT: Do not vent refrigerant to the atmosphere. The chlorofluorocarbons (CFCs) used in conventional refrigerant (R-12) may damage the earth's ozone layer. Always use UL-listed, refrigerant recovery/recycling equipment to extract the refrigerant before you open an A/C system to make repairs. Follow the equipment manufacturer's instructions.

REFRIGERANT RECOVERY/ RECYCLING SYSTEM



A/C System Service

Performance Test

The performance test will help to determine if the air conditioning system is operating within specifications.

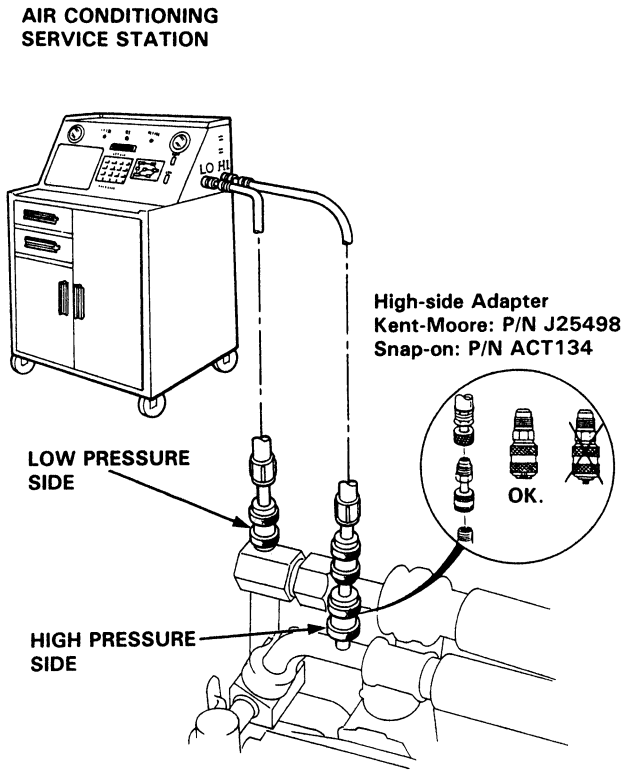
1. Connect the Air Conditioning Service Station as shown.

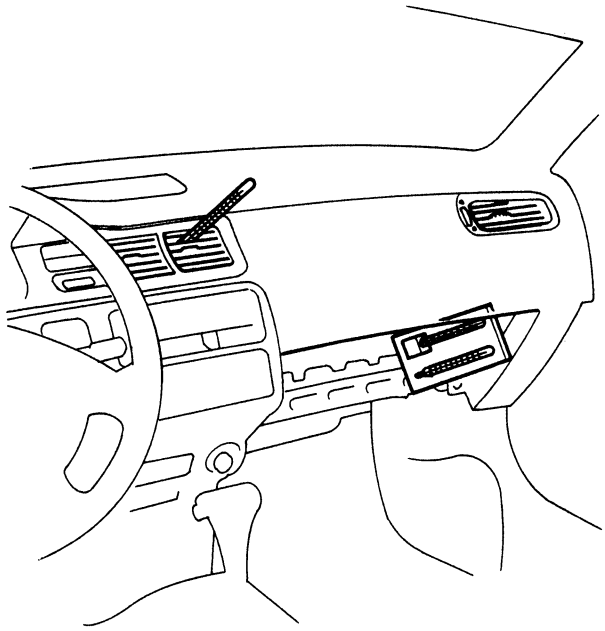
   NOTE: Connect the adapter to the high pressure hose first, then connect the hoses to the car as shown. When testing is completed, disconnect the hose adapter from the high-side fitting; do not disconnect the hose from the adapter, or refrigerant may escape from the system.

2. Insert a thermometer in the center vent outlet. Determine the relative humidity and ambient air temperature by calling the local weather station.

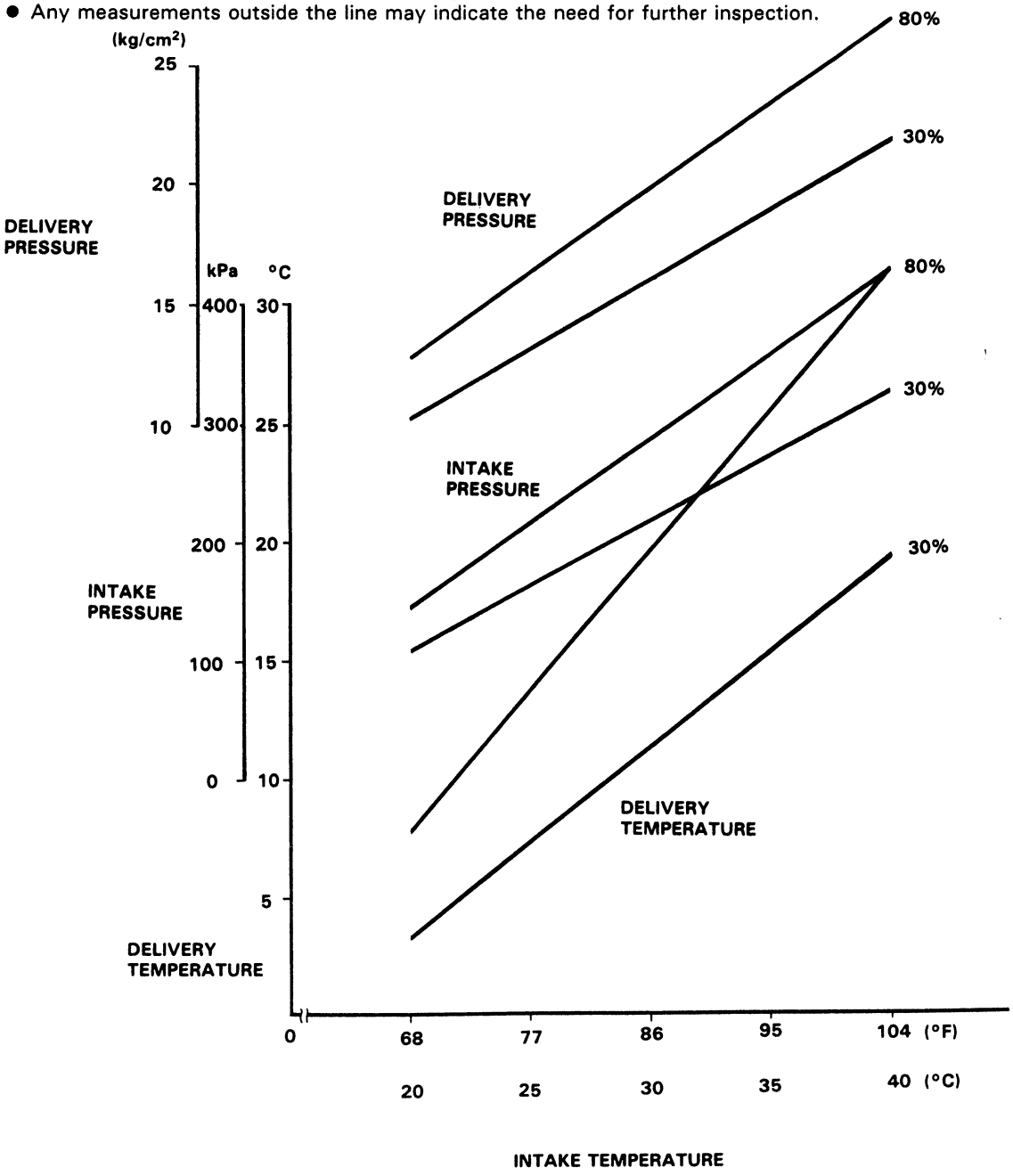
3. Test conditions:
   - Avoid direct sunlight.
   - Open engine hood.
   - Open front doors.
   - Set the temperature control dial to COLD and push the mode control button to VENT position and recirculation control button to REC position.
   - Slide the fan switch to the highest position.
   - Run the engine at 1,500 rpm.
   - No driver or passengers in vehicle.

4. After running the air conditioning for 10 minutes under the above test conditions, read the delivery temperature from the thermometer in the dash vent and the high and low system pressure from the Air Conditioning Service Station.





5. To complete the charts:
   - Mark the delivery temperature along the vertical line.
   - Mark the intake temperature (ambient air temperature) along the bottom line.
   - Draw a line straight up from the air temperature to the humidity.
   - Mark a point one line above and one line below the humidity level. (10% above and 10% below the humidity level)
   - From each point, draw a horizontal line across the delivery temperature.
   - The delivery temperature should fall between the two lines.
   - Complete the low side pressure test and high side pressure test in the same way.
   - Any measurements outside the line may indicate the need for further inspection.



A/C System Service

Pressure Test Chart

TEST RESULTS	RELATED SYMPTOMS	PROBABLE CAUSE	REMEDY
Discharge (high) pressure abnormally high	After stopping compressor, pressure drops to about 196 kPa (28 psi) quickly, and then falls gradually	Air in system	Evacuate system: then recharge Evacuation: page 22-32 Recharging: page 22-33
	No bubbles in sight glass when condenser is cooled by water	Excessive refrigerant in system	Discharge refrigerant as necessary
	Reduced or no air flow through condenser	• Clogged condenser or radiator fins • Condenser or radiator fan not working properly	• Clean • Check voltage and fan rpm • Check fan direction
	Line to condenser is excessively hot	Restricted flow of refrigerant in system	• Expansion valve • Restricted lines
Discharge pressure abnormally low	Excessive bubbles in sight glass; condenser is not hot	Insufficient refrigerant in system	• Check for leak • Charge system
	High and low pressures are balanced soon after stopping compressor	• Faulty compressor discharge or inlet valve • Faulty compressor seal	Replace
	Outlet of expansion valve is not frosted, low pressure gauge indicates vacuum	• Faulty expansion valve • Moisture in system	• Replace • Flush and evacuate
Suction (low) pressure abnormally low	Excessive bubbles in sight glass: condenser is not hot	Insufficient refrigerant	Check for leaks. Charge as required.
	Expansion valve is not frosted and low pressure line is not cold. Low pressure gauge indicates vacuum	• Frozen expansion valve • Faulty expansion valve	Replace expansion valve
	Discharge temperature is low and the air flow from vents is restricted	Frozen evaporator	Run the fan with compressor off then check capillary tube.
	Expansion valve frosted	Clogged expansion valve	Clean or Replace
	Receiver dryer is cool (should be warm during operation)	Clogged receiver dryer	Replace
Suction pressure abnormally high	Low pressure hose and check joint are cooler than around evaporator	• Expansion valve open too long • Loose expansion valve	Repair or Replace.
	Suction pressure is lowered when condenser is cooled by water	Excessive refrigerant in system	Discharge refrigerant as necessary
	High and low pressure are equalized as soon as the compressor is stopped and both gauges fluctuate while running	• Faulty gasket • Faulty high pressure valve • Foreign particle stuck in high pressure valve	Replace compressor
Suction and discharge pressures abnormally high	Reduced air flow through condenser	• Clogged condenser or radiator fins • Condenser or radiator fan not working properly	• Clean condenser and radiator • Check voltage and fan rpm • Check fan direction
	No bubbles in sight glass when condenser is cooled by water	Excessive refrigerant in system	Evacuate and recharge
Suction and discharge pressure abnormally low	Low pressure hose and metal end areas are cooler than evaporator	Clogged or kinked low pressure hose parts	Repair or Replace
	Temperature around expansion valve is too low compared with that around receiver dryer	Clogged high pressure line	Repair or Replace
Refrigerant leaks	Compressor clutch is dirty	Compressor shaft seal leaking	Replace compressor
	Compressor bolt(s) are dirty	Leaking around bolt(s)	Tighten bolt(s) or replace compressor
	Compressor gasket is wet with oil	Gasket leaking	Replace compressor
Compressor heat damage	Black soot inside compressor and hoses.	Restriction or leak in system.	Flush entire system, replace rubber lines or hoses.

Evaporator

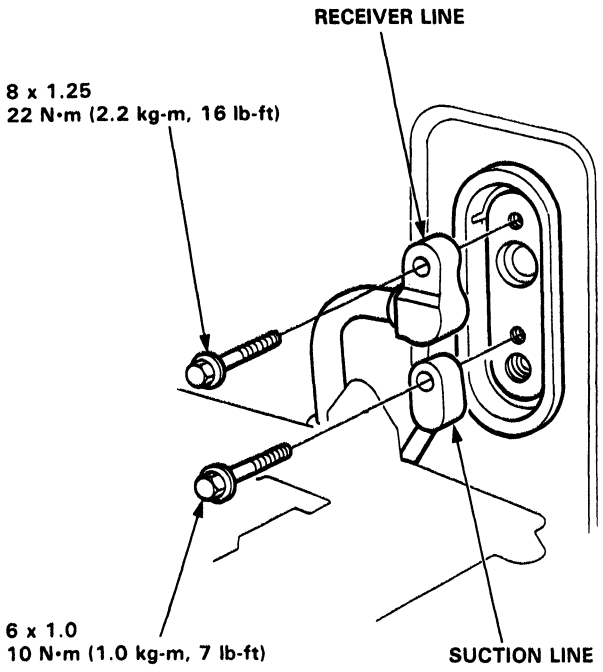
Replacement

1. Disconnect the battery negative terminal first then the positive cable.
   Remove the battery.

2. Discharge the refrigerant (page 22-17).

3. Remove the bolts and disconnect the receiver line and suction line from the evaporator.

   CAUTION: Cap the open fittings immediately to keep moisture out of the system.

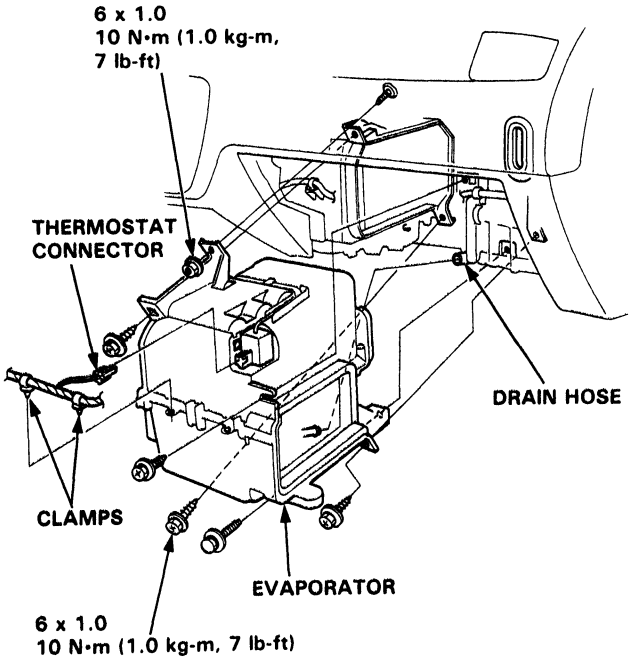


4. Remove the glove box and glove box frame (Section 20).

5. Disconnect the connector from the A/C thermostat and pull off the clamps from the evaporator.

6. Remove the self-tapping screws (4), bolt and nut.

7. Disconnect the drain hose and remove the evaporator.



8. Install in the reverse order of removal, and:

   - Apply a sealant to the grommets.
   - Make sure that there is no air leakage.
   - Charge the system (page 22-33) and test performance (page 22-18).

Evaporator

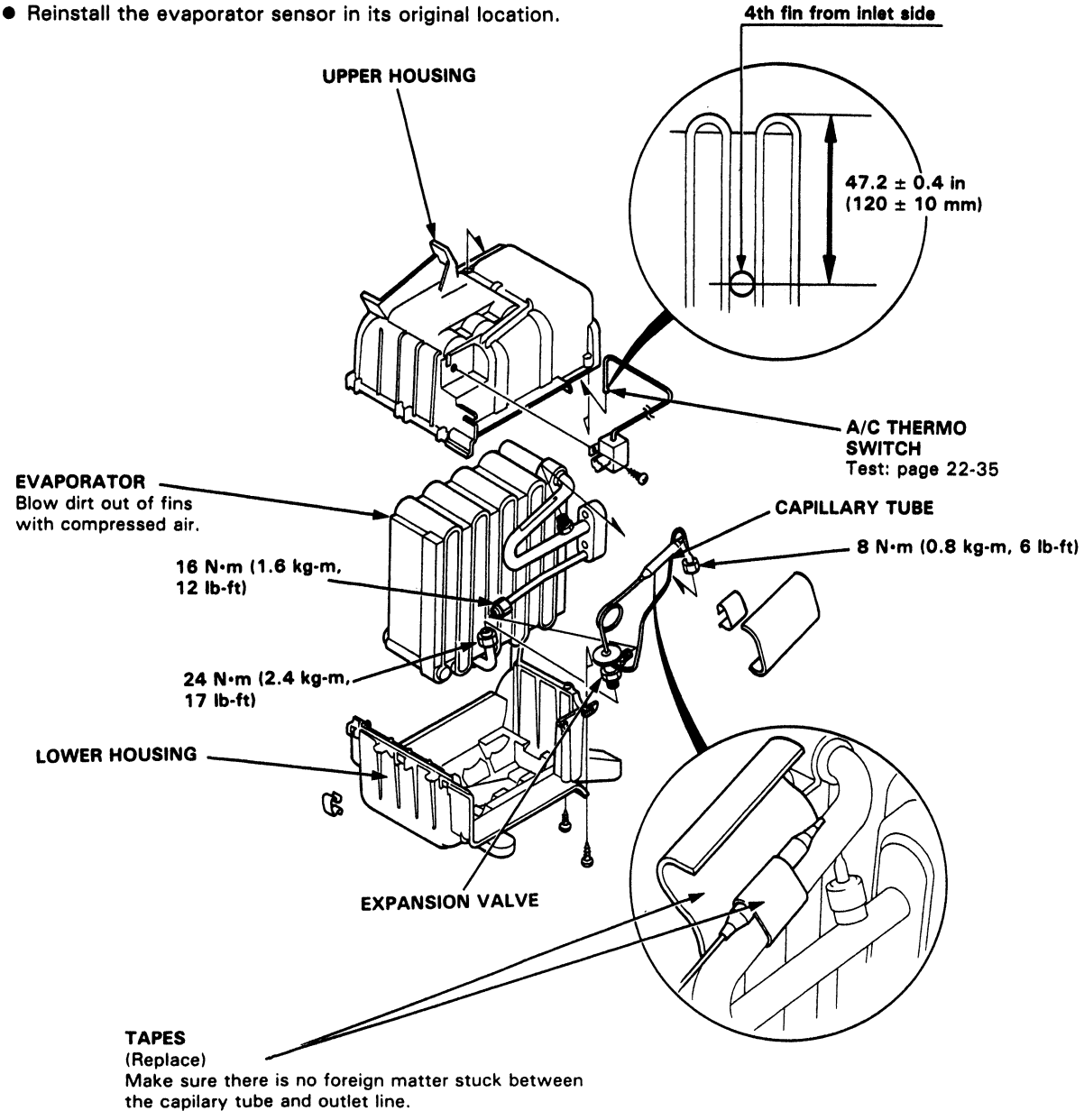
Overhaul

1. Pull the evaporator sensor out of the evaporator fins.
2. Remove the self-tapping screws and clips from the housing.
3. Carefully separate the housings and remove the evaporator covers.
4. Remove the expansion valve if necessary.

NOTE: When loosening the expansion valve nuts, use a second wrench to hold the valve or evaporator pipe or they can be cracked.

Assemble the evaporator in the reverse order of disassembly, and:

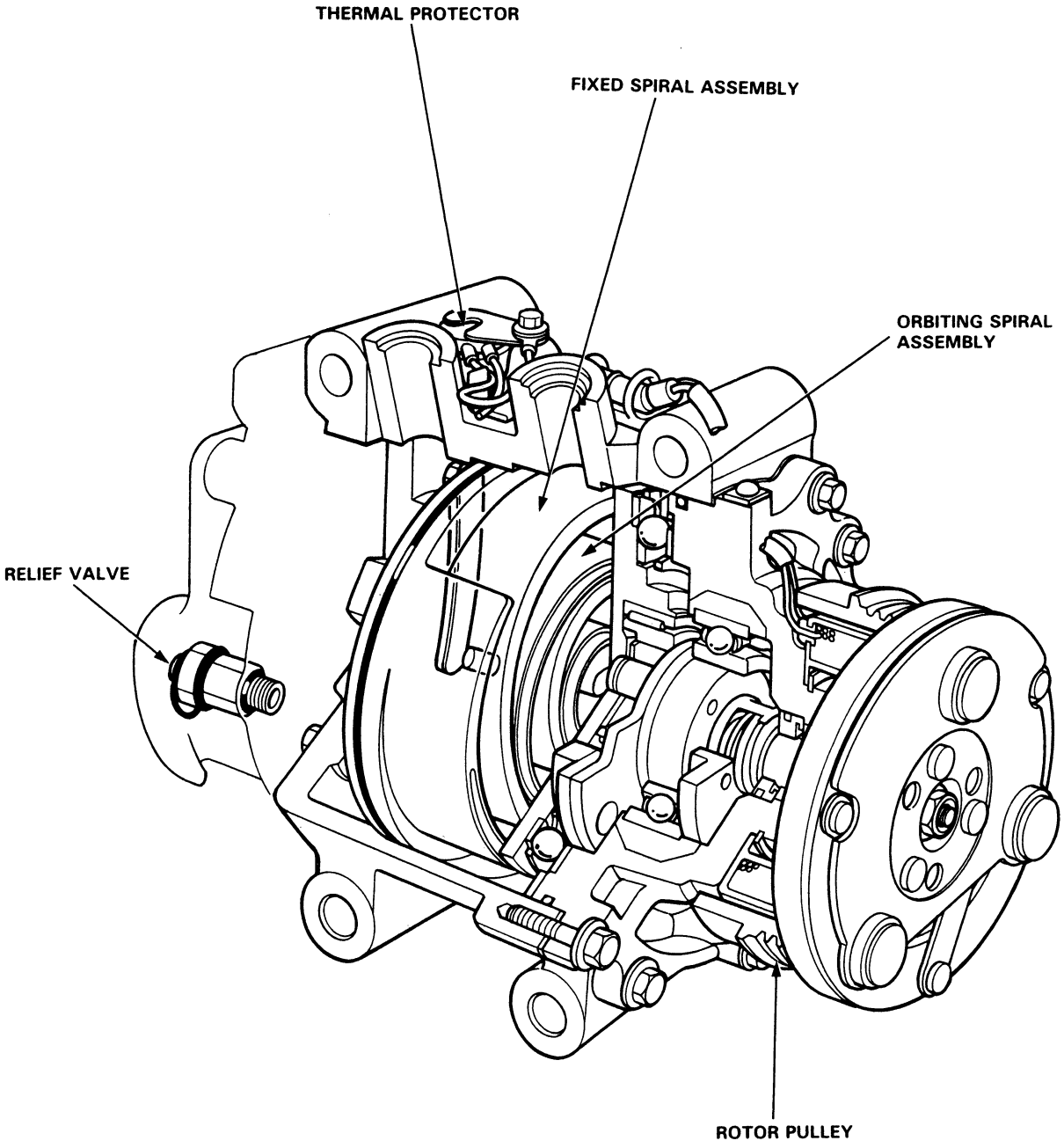
- Apply a thin coat of refrigerant oil to the new O-rings at joint nuts.
- Install the expansion valve capillary tube with the capillary tube in contact with the suction line directly, and wrap it with tape.
- Reinstall the evaporator sensor in its original location.



Compressor

Description

This compressor is the spiral type. Refrigerant is compressed between a fixed spiral assembly and an orbiting spiral assembly. A thermal protector is installed on this compressor.



Compressor

Replacement

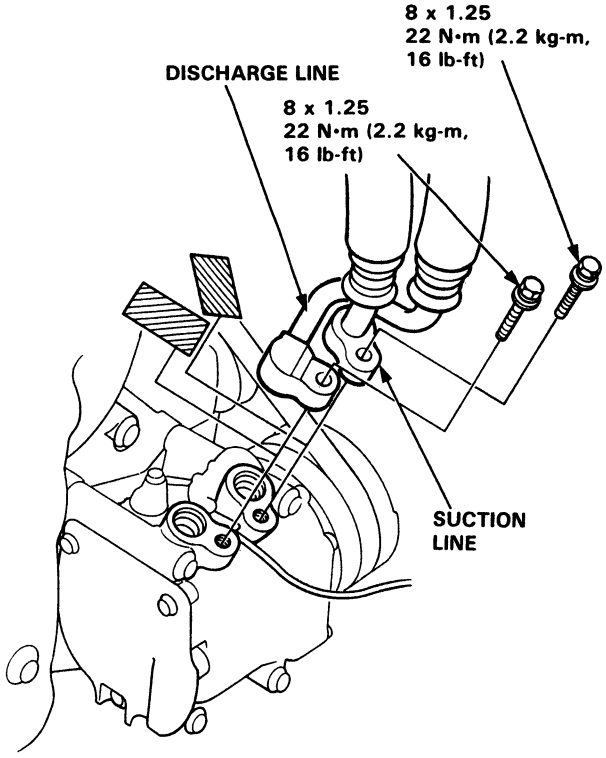
1. If the compressor is marginally operable, run the engine at idle speed and turn the air conditioner fan for a few minutes, then shut the engine off and disconnect the battery negative terminal.

2. Discharge the refrigerant from the system (page 22-17).

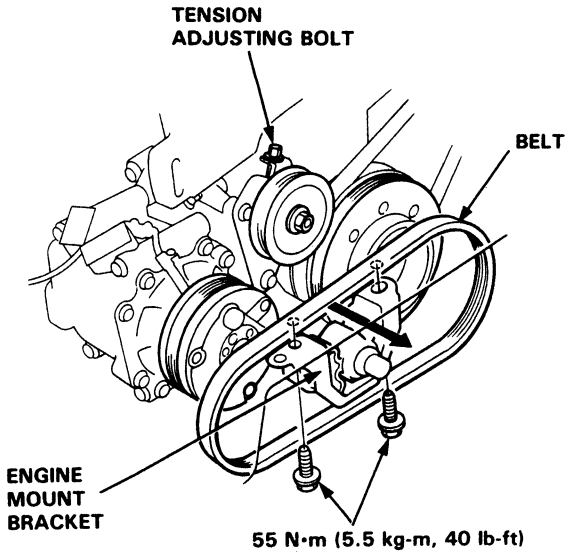
3. Remove the power steering pump (Section 17).

4. Remove the bolts (2) and disconnect the suction line and discharge line from the compressor.

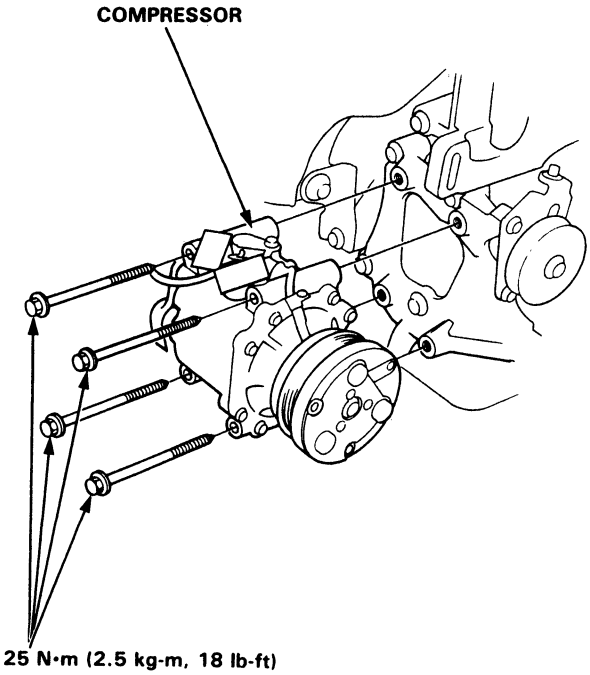
   CAUTION: Cap the open fittings immediately to keep moisture out of the system.



5. Loosen the compressor belt tension adjusting bolt and remove the belt from the pulleys.
   Remove the left engine mount bracket bolts (2) and pass the belt through the gap between the body and left engine mount bracket.



6. Disconnect the compressor clutch 1P connector.
   Remove the compressor mounting bolts (4) and compressor.

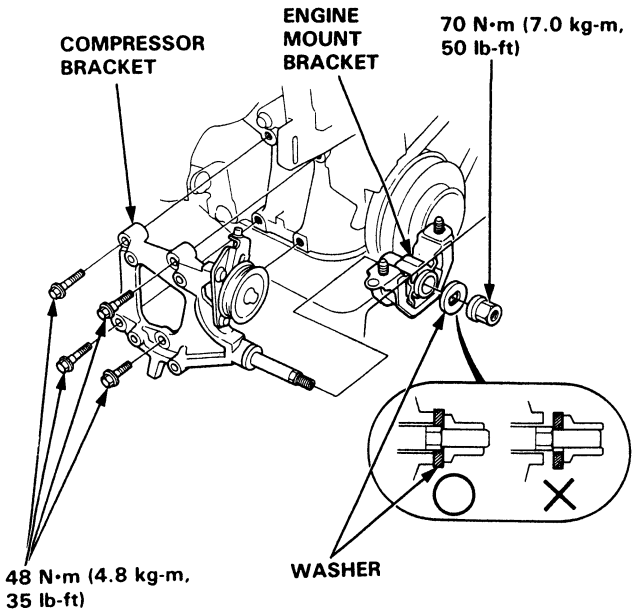


7. If necessary, remove the compressor bracket as follows:

   — Remove the nut, washer and left engine mount bracket.

   NOTE: When tightening the left engine mount nut, make sure the washer is set properly on the engine mount bolt as shown.

   — Remove the compressor bracket mounting bolts (4) and bracket.



8. Install the removed parts in the reverse order of removal and:

   - If a new compressor is installed, calculate the refrigerant oil as below and drain through the suction fitting on the compressor:
     120—140 cc (4—4-2/3 fl-oz) minus contents of old compressor, equals amount to drain from new compressor.
   - Do not damage the condenser fins when removing/installing the compressor.
   - Adjust compressor belt tension (page 22-26).
   - Charge the A/C system (page 22-33).
   - Test the A/C system performance (page 22-18).

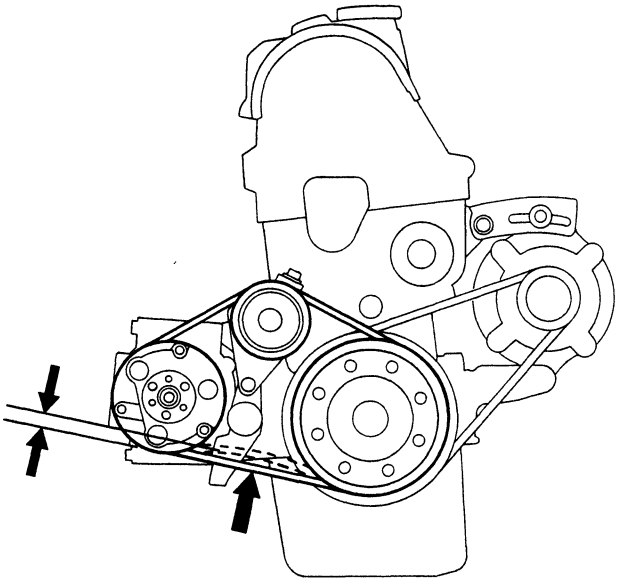
Compressor

Belt Adjustment

1. Apply a force of 100 N (10 kg, 22 lb) and measure the deflection between the A/C compressor and crankshaft pullies.

   Deflection:
   Used Belt: 6.5—10.5 mm (0.26—0.41 in)
   New Belt: 5.0—7.0 mm (0.20—0.31 in)

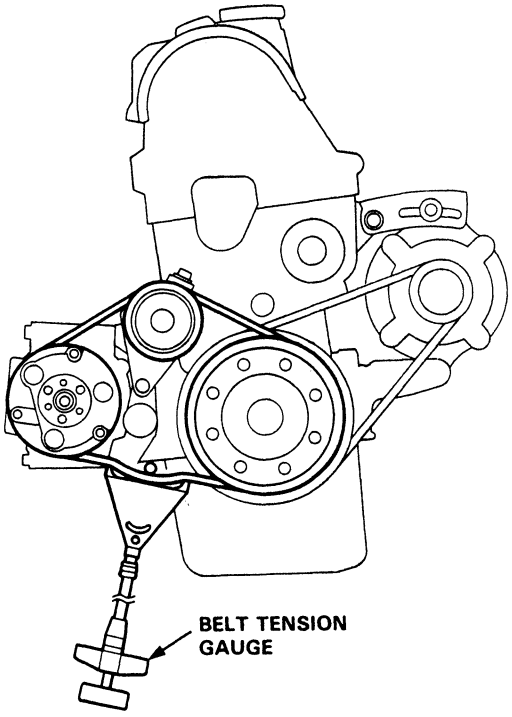
   NOTE:
   - If there are cracks or any damage evident on the belt, replace it with a new one.
   - "Used belt" means a belt which has been used for five minutes or more.
   - "New belt" means a belt which has been used for less than five minutes.



Measure with Belt Tension Gauge:
Attach the belt tension gauge to the belt and measure the tension of the belt.

Tension:
Used Belt: 350—500 N (35—50 kg, 77—110 lb)
New Belt: 600—800 N (60—80 kg, 132—176 lb)

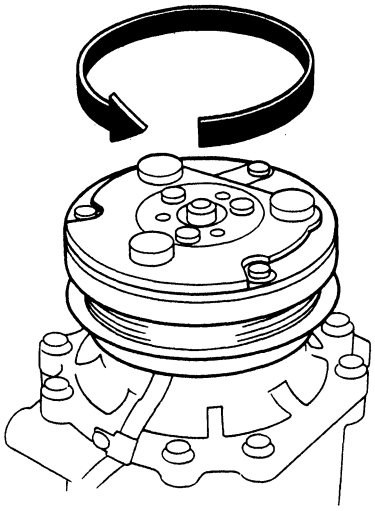
NOTE:
- If there are cracks or any damage evident on the belt, replace it with a new one.
- See the instructions for the tension gauge.



2. Loosen the A/C adjust pulley nut or bolt and the adjusting bolt lock nut.
3. Turn the adjusting bolt to get proper belt tension, then retighten the bolt and nuts.
4. Recheck the deflection of the belt.

Clutch Inspection

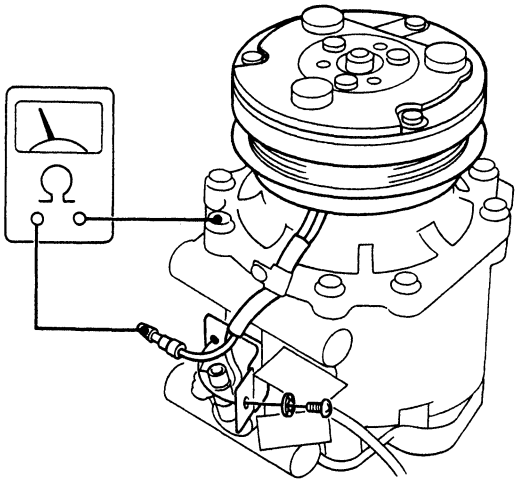
- Check the rotor pulley bearing play and drag by rotating the rotor pulley by hand. Replace the rotor pulley with a new one if it is noisy or has excessive play/drag.



- Release the compressor clutch connector from the connector holder.
  Check the field coil for resistance:

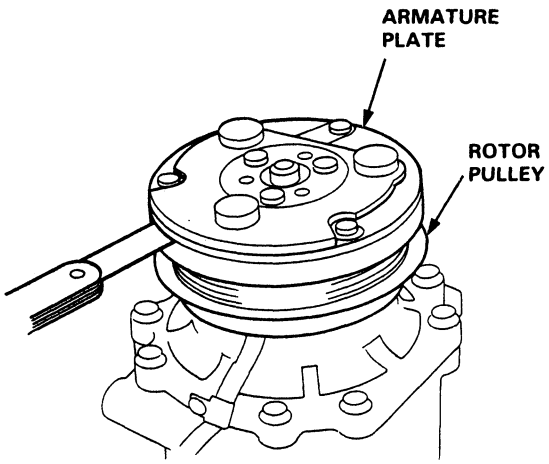
  Field Coil resistance:
  2.8 ± 0.15 ohm at 20°C (68°F)

If resistance is not within specifications, replace the field coil.

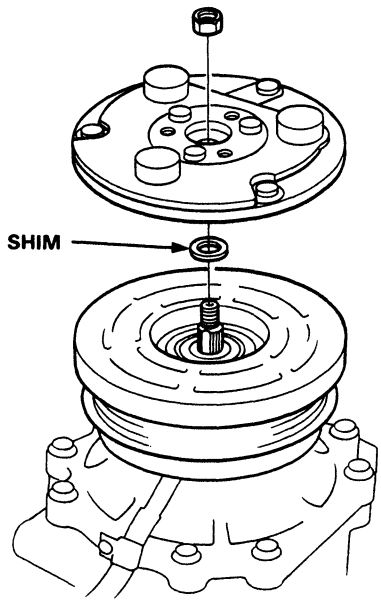


- Measure the clearance between the rotor pulley and armature. If the clearance is not within specified limits, the armature must be removed and shims added or removed as required.

  CLEARANCE: 0.35—0.65 mm (0.014—0.026 in)



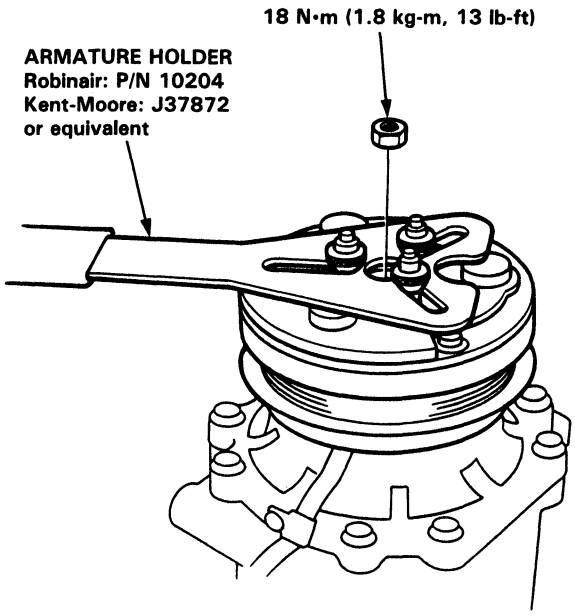
NOTE: The shims are available in four sizes: 0.1 mm, 0.2 mm, 0.4 mm and 0.5 mm of thickness.



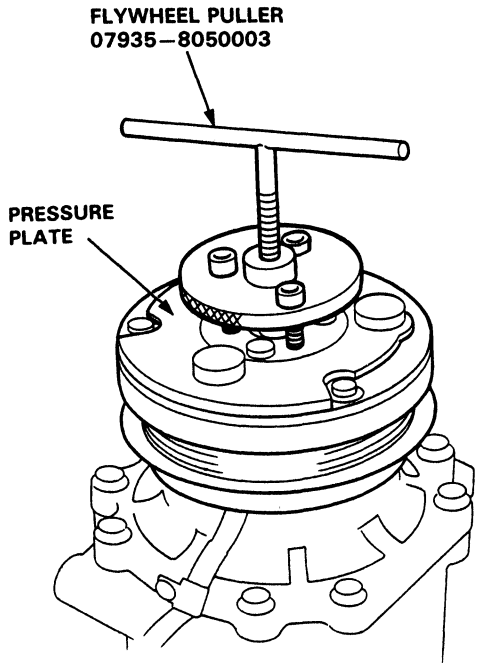
Compressor

Clutch Overhaul

1. Remove the center nut while holding the pressure plate.

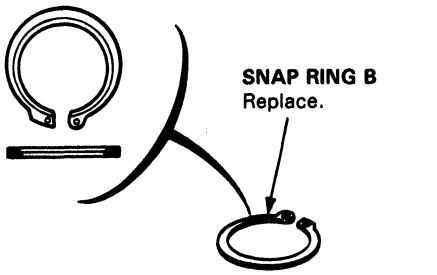


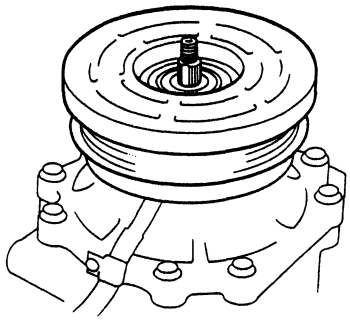
2. Using the special tool, remove the pressure plate and shim(s).



3. Remove the snap ring B with a snap ring pliers.

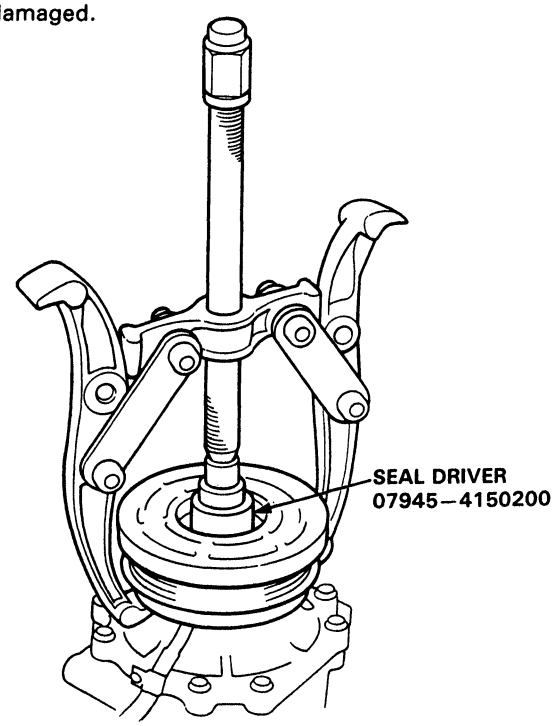
   NOTE: Once the snap ring B is removed, replace it with a new one.





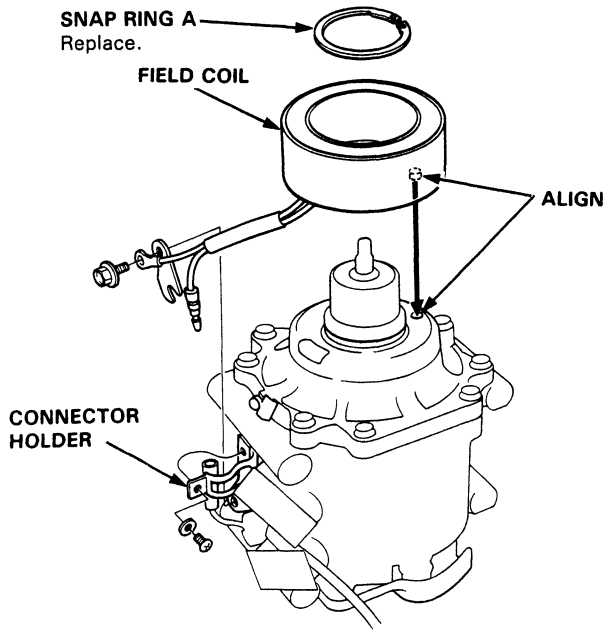
4. Remove the pulley from the shaft with a puller and special tool.

   NOTE: Put the claws of the puller on the back of the pully, not the belt area, or the pulley can be damaged.



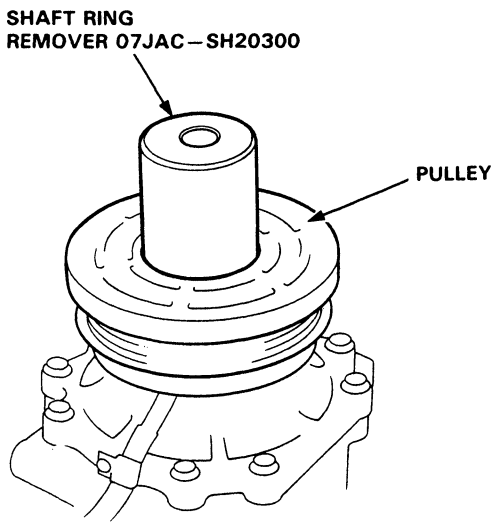
5. Remove the snap ring A with a snap ring pliers. Release the field coil connector from the connector holder and disconnect the connector and field coil ground terminal.
Remove the field coil from the compressor cover.

NOTE:
- Once the snap ring A is removed, replace it with a new one.
- When installing the field coil, align the boss on the field coil with the hole in the compressor.



6. Press the rotor pulley onto the field coil with a shaft ring remover.

CAUTION: Maximum press load: 0.4 tons.

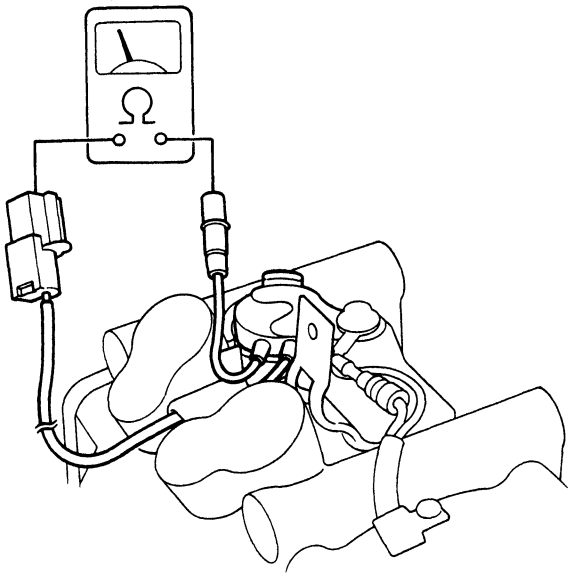


7. Install the removed parts in the reverse order of removal and:
- Clean the pulley and compressor sliding surfaces with non-petroleum solvent.
- Install the snap rings with the chamfered side facing out and make sure the snap rings are fitted to the groove completely.
- After installing, make sure that the pulley turns smoothly.
- Route and clamp the wires properly or they can be damaged by the rotor pulley.

Compressor

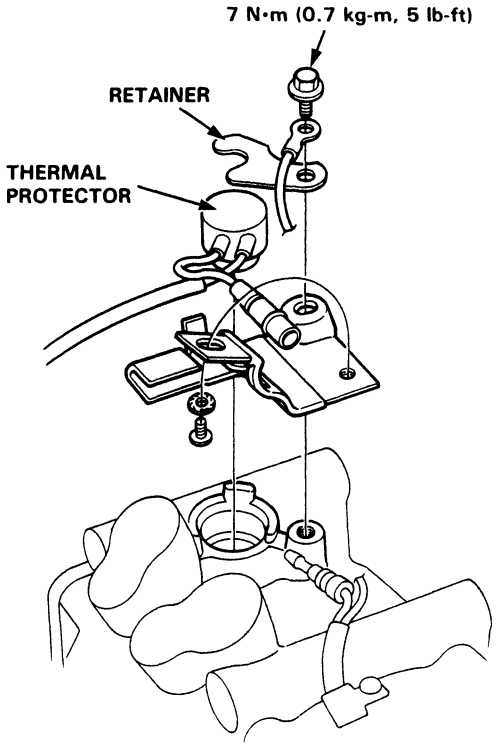
Thermal Protector Inspection

Disconnect the thermal protector connectors and check for continuity between the connectors of the thermal protector. There should be continuity.
If there is no continuity, replace the thermal protector.

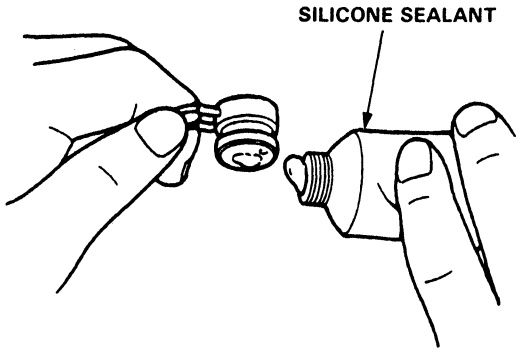


Thermal Protector Replacement

1. Remove the bolt, field coil terminal and thermal protector retainer.
2. Remove the thermal protector.
   Remove the residue of silicone sealant from the cup of thermal protector.



3. Apply silicone sealant to the top of the thermal protector.



4. Install in the reverse order of removal.

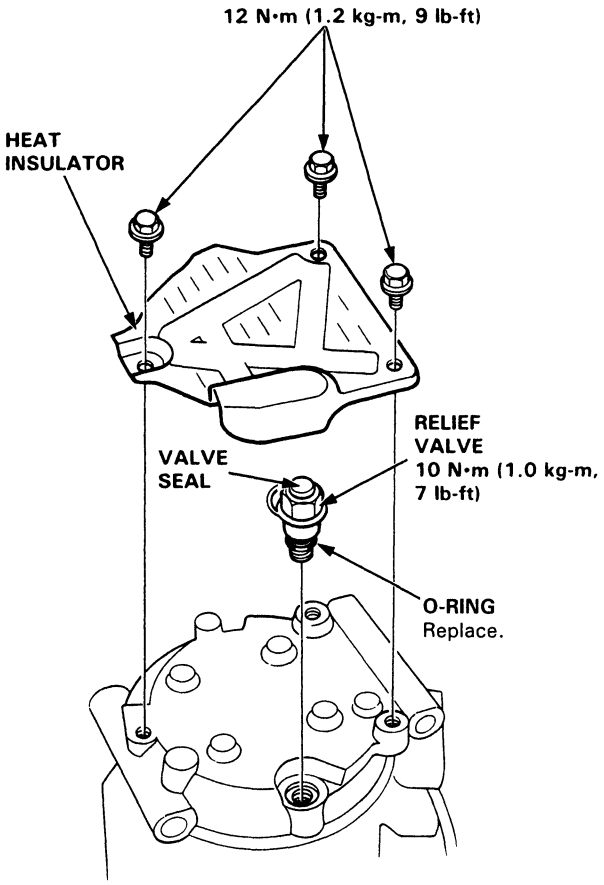
Relief Valve Replacement

Removal

NOTE: Make sure the suction and discharge ports are plugged with caps.

1. Remove the bolts (3), heat insulator, relief valve and O-ring.

   CAUTION: Be careful not to spill compressor oil, and make sure there is no foreign matter in system.



Installation

1. Clean off the relief valve mating surface.
2. Apply compressor oil to the O-ring.
3. Tighten the relief valve.
4. Check the relief valve for leaks and cap the relief valve with the valve seal.

Condenser

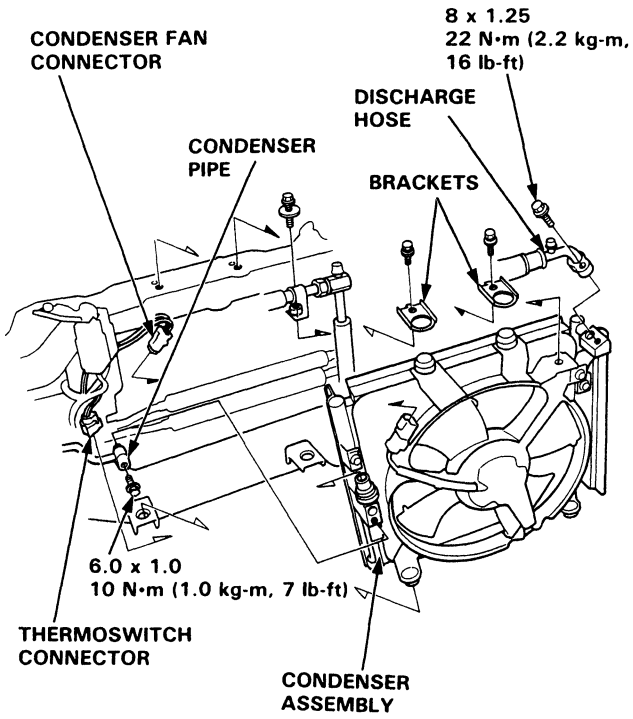
Replacement

1. Discharge refrigerant from the system using a refrigerant recovery system (page 22-17).
2. Disconnect the thermo switch connector and condenser fan connector.
3. Disconnect the discharge hose and condenser pipe from the condenser.

   CAUTION: Cap the open fittings immediately to keep moisture and dirt out of the system.

4. Remove the suction hose clamp bolt and condenser brackets.
5. Remove the condenser assembly by pulling it up.

   NOTE:
   - Be careful not to damage the condenser fins when removing/installing the condenser.
   - Be careful not to hit the side of the radiator during removal/installation.



6. Install the removed parts in the reverse order of removal and:
   - Replace O-rings with new ones at the pipe joints.
   - Charge the A/C system (page 22-33).
   - Test the A/C system performance (page 22-18).

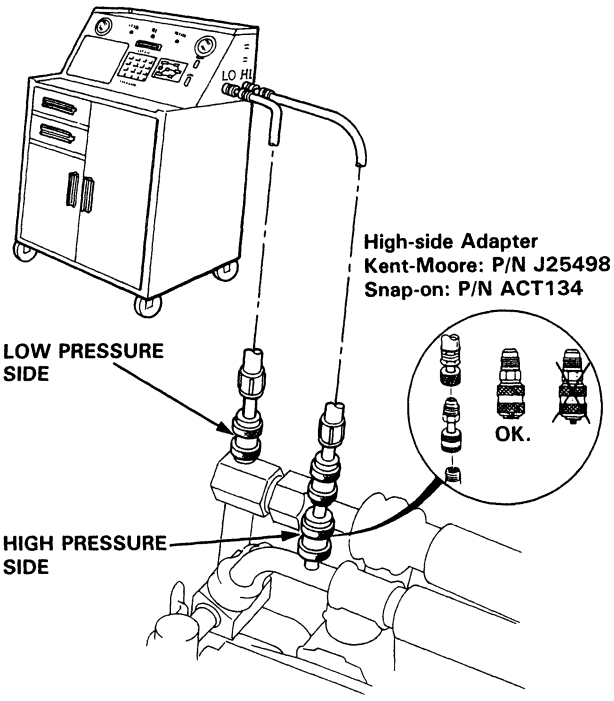
A/C System Service

A/C System Evacuation

1. When an A/C System has been opened to the atmosphere, such as during installation or repair, it must be evacuated using a vacuum pump. (If the system has been open for several days, the receiver/dryer should be replaced).

2. Attach an Air Conditioning Service Station as shown.
   Follow the equipment manufacturer's instructions.

   NOTE:
   - Connect the adapter to the high pressure hose first, then connect the hoses to the car as shown. When testing is completed, disconnect the hose adapter from the high-side fitting; do not disconnect the hose from the adapter, or refrigerant may escape from the system.
   - If low pressure does not reach more than 700 mmHg (27 in-Hg) in 15 minutes, there is probably a leak in the system. Partially charge the system and check for leaks (see page 22-34 for leak test).



A/C System Charging

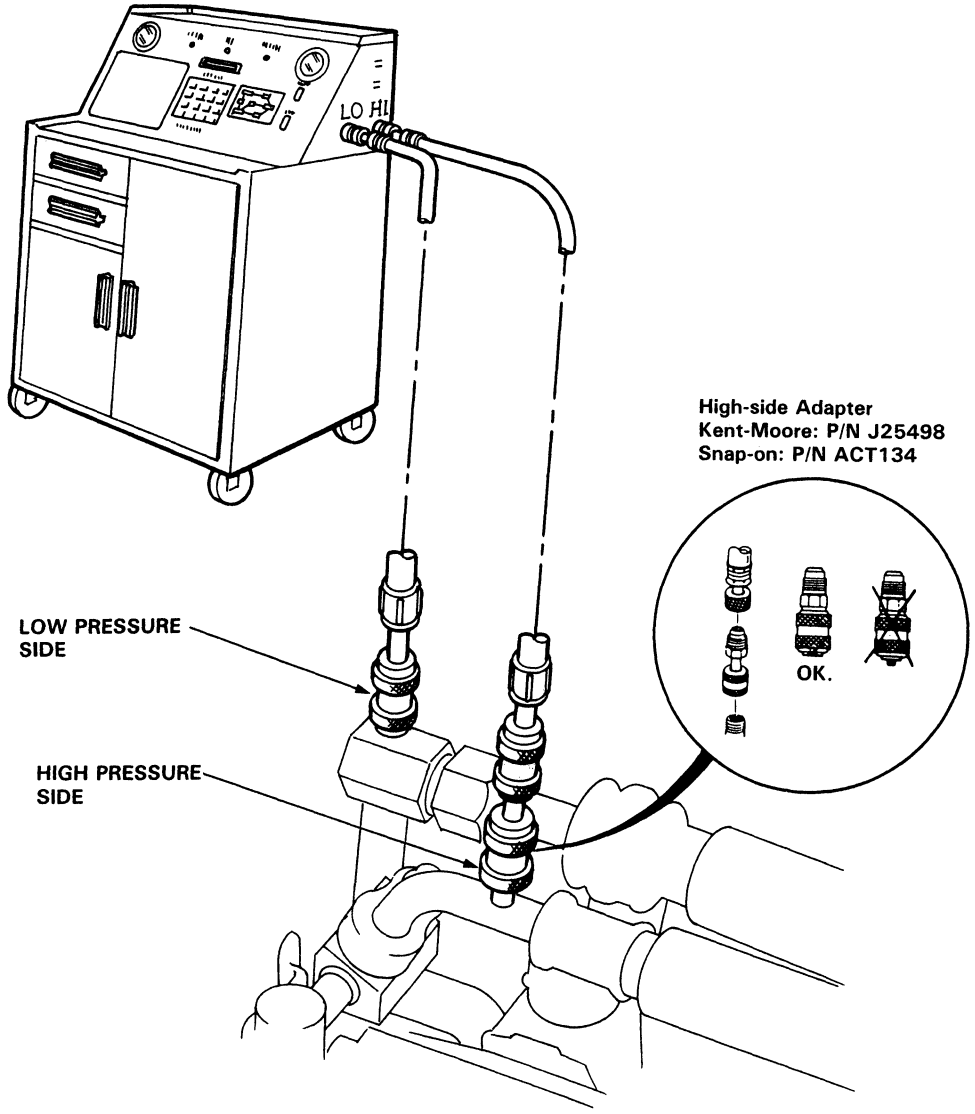
Refrigerant capacity: 600—650 g (21—23 oz)

⚠WARNING Always wear eye protection when charging the system.

CAUTION: Do not overcharge the system; the compressor will be damaged.

Attach an Air Conditioning Service Station as shown. Follow the equipment manufacturer's instructions.

NOTE: Connect the adapter to the high pressure hose first, then connect the hoses to the car as shown. When testing is completed, disconnect the hose adapter from the high-side fitting; do not disconnect the hose from the adapter, or refrigerant may escape from the system.



A/C System Service

Leak Test

⚠WARNING When handling refrigerant (R-12):

- **Always wear eye protection.**
- **Do not let refrigerant get on your skin or in your eyes. If it does:**
  - **— Do not rub your eyes or skin.**
  - **— Splash large quantities of cool water in your eyes or on your skin.**
  - **— Rush to a physician or hospital for immediate treatment. Do not attempt to treat it yourself.**
- **Keep refrigerant containers (cans of R-12) stored below 40°C (100°F).**
- **Keep away from open flame. Refrigerant, although non-flammable, will produce poisonous gas if burned.**
- **Work in a well-ventilated area. Refrigerant evaporates quickly and can force all the air out of a small, enclosed area.**

IMPORTANT: Do not vent refrigerant to the atmosphere. The chlorofluorocarbons (CFCs) used in conventional refrigerant (R-12) may damage the earth's ozone layer. Always use UL-listed, refrigerant recovery/recycling equipment to extract the refrigerant before you open an A/C system to make repairs. Follow the equipment manufacturer's instructions.

1. Attach an Air Conditioning Service Station as shown.

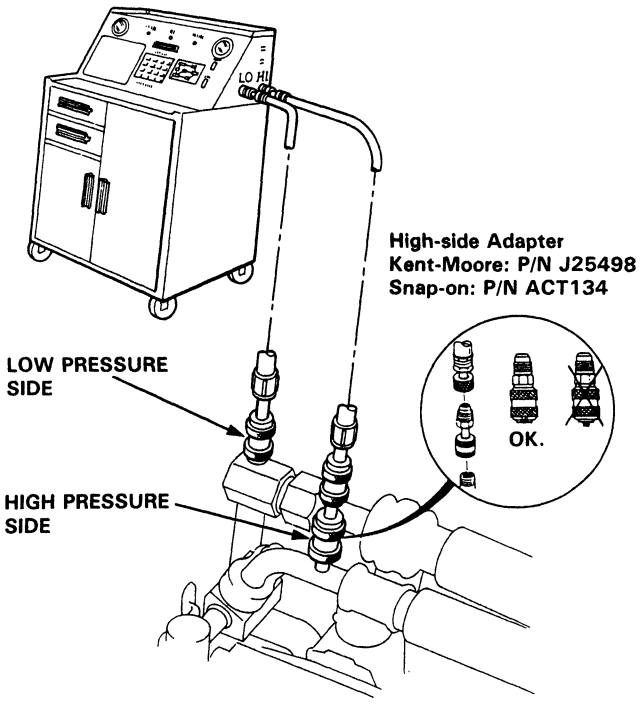
   NOTE: Connect the adapter to the high pressure hose first, then connect the hoses to the car as shown. When testing is completed, disconnect the hose adapter from the high-side fitting; do not disconnect the hose from the adapter, or refrigerant may escape from the system.

2. Open high pressure valve to charge the system to about 100 kPa (14 psi), then close the supply valve.

3. Check the system for leaks using an electronic leak tester.
   Follow the manufacturer's instructions.

4. If you find leaks that require the system to be opened (to repair or replace hoses, fittings, etc.), release any charge in the system according to the Discharge Procedure on page 22-18.

5. After checking and repairing leaks, the system must be evacuated (see System Evacuation on page 22-33).



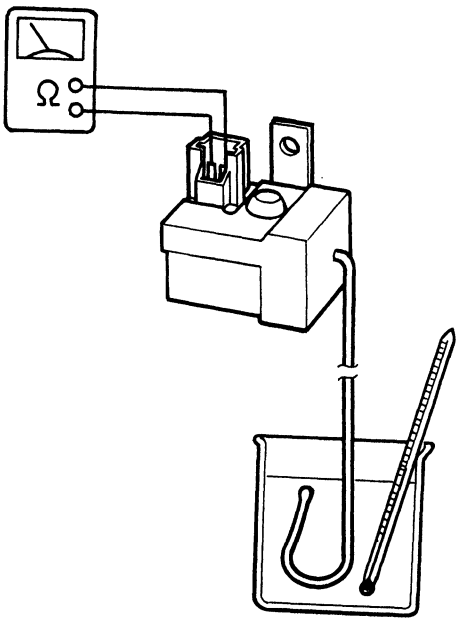
Test

A/C Thermo Switch

Dip A/C thermo switch into a pan filled with ice water, and check for continuity between the terminals.

Cut off: 1.5—−0.5°C (35—33°F)
Cut in: 2.5—5°C (36—41°F)

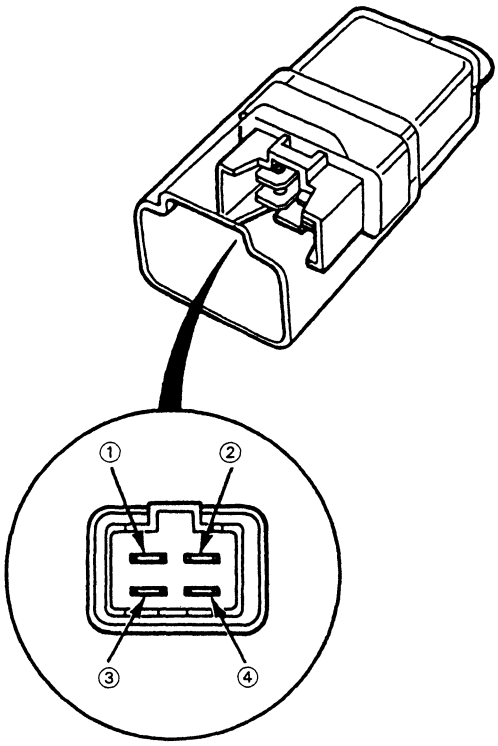
If cut off or cut in temperature is too low or too high, replace the thermo switch.

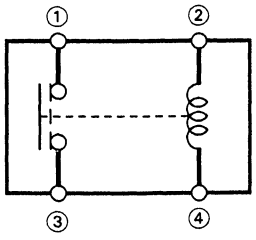


Relay

NOTE: All A/C system relays are similar.

1. Check for continuity between terminals ① and ③.
2. Connect a 12 V battery across terminals ② and ④. There should be continuity between terminals ① and ③.





Test

A/C Switch

Check for continuity between the terminals according to the table below.

Terminal No. / Position	①	②
ON	○———	———○
OFF